

SEQUENCE LISTING

<110> Macina, Roberto
 Recipon, Herve
 Pluta, Jason
 Ghosh, Malavika
 Sun, Yongming
 Liu, Chenghua

<120> Compositions and Methods Relating to Colon Specific Genes and Proteins

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<150> 60/252,505

<151> 2000-11-22

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<170> PatentIn version 3.1

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 <213> Homo sapien

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 <212> DNA
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<213> Homo sapien

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 <211> 2254
 <212> DNA
 <213> Homo sapien

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 <212> DNA
 <213> Homo sapien

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<400> 58
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<212> DNA
<213> Homo sapien
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<211> 1441
<212> DNA
<213> Homo sapien
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 <213> Homo sapien

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 <212> DNA
 <213> Homo sapien

<400> 62

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 <212> DNA
 <213> Homo sapien

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 <212> DNA
 <213> Homo sapien

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 <212> DNA
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 <212> DNA
 <213> Homo sapien

<400> 66
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 <212> DNA
 <213> Homo sapien

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 ccagcacttt gggaggccaa gcgagcagat catgggtcgg gagtctagaa caggctgggc 240
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 <211> 405
 <212> DNA
 <213> Homo sapien

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 <212> DNA
 <213> Homo sapien

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<210> 70
 <211> 299
 <212> DNA
 <213> Homo sapien

<400> 70
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 caatgtgcta ttagaataaa aagctctctc tgccccataa agtgggagtc agaaagaggg 180

ctcaagcttc tttatcctct tcagtgccat aaatactgtc acagcaaaaa ggccttcagt 240
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<210> 71
<211> 1689
<212> DNA
<213> Homo sapien

<400> 71
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<210> 72
 <211> 262
 <212> DNA
 <213> Homo sapien

<400> 72
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 tgaataattt atccttgtat taggtgggtcc aaatatttca ttgtcagtta tatattagct 180
 caaattaaat tttagataat atatattatt attaattggta aagaatgtgt cacatttatc 240
 tttatagctt ttctgtacct gc 262

<210> 73
 <211> 1323
 <212> DNA
 <213> Homo sapien

<400> 73
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<210> 74
 <211> 2919
 <212> DNA
 <213> Homo sapien

<400> 74
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<210> 75
 <211> 27
 <212> PRT
 <213> Homo sapien

<400> 75

Met His Thr Asn Leu Ser Tyr Met Cys Pro Phe Leu Leu Met Ile Phe
 1 5 10 15

Thr Ser Leu Arg Thr Leu Thr Asn Ile Val Cys
 20 25

<210> 76
 <211> 29
 <212> PRT
 <213> Homo sapien

<400> 76

Met Ile Lys Asn Asp Phe Gly Trp Leu Pro Phe Pro Ser Phe Pro Arg
 1 5 10 15

Val Leu Ile Tyr Val Leu His Thr Cys Lys Leu Lys Cys
 20 25

<210> 77
 <211> 38
 <212> PRT
 <213> Homo sapien

<400> 77

Met Ser Leu Ile Lys Lys Ile Ser Thr Thr Gly Leu Phe Cys Leu Gly
 1 5 10 15

Phe Trp Lys His Asn Phe Pro Met His Lys Lys Ala Leu Ser Lys Leu
 20 25 30

Leu Ser Tyr Gly Tyr Asn
 35

<210> 78

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<211> 170
 <212> PRT
 <213> Homo sapien

<400> 78

Ala Leu Glu Thr Ala Pro Thr Leu Ala Leu Pro Asp Ser Ser Gln Pro
 1 5 10 15

Phe Ser Leu His Thr Ala Glu Val Gln Gly Cys Ala Val Gly Ile Leu
 20 25 30

Thr Gln Gly Pro Gly Ser Arg Pro Val Ala Phe Leu Ser Lys His Leu
 35 40 45

Asp Leu Thr Val Leu Gly Trp Ser Ser Cys Leu Arg Ala Ala Ala Ser
 50 55 60

Ala Ala Leu Ile Leu Leu Glu Ala Leu Lys Ile Thr Asn Tyr Ala Gln
 65 70 75 80

Leu Thr Leu Tyr Ser Ser His Asn Phe Gln Asn Leu Phe Ser Ser Ser
 85 90 95

His Leu Met His Val Leu Ser Ala Pro Trp Leu Leu Gln Leu Tyr Ser
 100 105 110

Leu Phe Val Glu Ser Pro Thr Ile Thr Ile Ile Pro Gly Arg Asp Phe
 115 120 125

Asn Pro Ala Ser His Ile Ile Pro Asp Thr Thr Pro Asp Pro His Asp
 130 135 140

Cys Ile Ser Leu Ile His Leu Thr Phe Thr Pro Phe Pro His Ile Ser
 145 150 155 160

Phe Phe Pro Val Pro His Pro Asp His Thr
 165 170

<210> 79
 <211> 74
 <212> PRT
 <213> Homo sapien

<400> 79

Met Glu Ser Cys Ser His Arg Cys Leu Asp Leu Ser Leu Ser Leu Ser
 1 5 10 15

09989919-112101

Met Ser His Tyr His Val Ile Ile Cys Ile Asn Ile Ser His Asn Asp
1 5 10 15

Phe His Asn Phe Gln Arg Leu Ile Ser
20 25

<210> 83
<211> 52
<212> PRT
<213> Homo sapien

<400> 83

Met Asp Cys Pro His Ala Ala Pro Thr Ala Cys Cys Gly Met Cys Ser
1 5 10 15

Ser Ser Ser Arg Gly Phe Ser Tyr Ile Leu Thr Leu Leu Asn Thr Val
20 25 30

Met Gly Leu Pro Thr Glu Pro Ser Gln Gly Gly Ala Gln Pro Pro Val
35 40 45

Gly Arg Leu Ala
50

<210> 84
<211> 175
<212> PRT
<213> Homo sapien

<400> 84

Val Leu His Leu Tyr Arg Ser Gly Gln Tyr Leu Gln Asn Ser Thr Ala
1 5 10 15

Ser Ser Ser Thr Glu Tyr Gln Cys Ile Pro Asp Ser Thr Ile Pro Gln
20 25 30

Glu Asp Tyr Arg Cys Trp Pro Ser Tyr His His Gly Ser Cys Leu Leu
35 40 45

Ser Val Phe Asn Leu Ala Glu Ala Val Asp Val Cys Glu Ser His Ala
50 55 60

Gln Cys Arg Ala Phe Val Val Thr Asn Gln Thr Thr Trp Thr Gly Glu
65 70 75 80

Pro Val Gly Glu Ala Leu Pro Arg Glu Met Ala Gly Pro Leu Trp Arg
85 90 95

Leu Ile Asp Ser Asp Pro Pro Ser Glu Val Arg Gly Gly Ala Glu Val

09989919-1101

100

105

110

Met Arg Glu Arg Tyr Thr Cys Leu Gln Gly Ser Gln Ile Arg Glu Asn
 115 120 125

Gly Leu Ala Ser Arg Lys Arg Asn Ile Gln Pro Cys Tyr Leu Ser Pro
 130 135 140

Leu Pro Pro Gly Arg Gln Leu Val Phe Phe Lys Thr Gly Trp Ser Gln
 145 150 155 160

Val Val Pro Asp Pro Asn Lys Thr Thr Tyr Val Lys Ala Ser Gly
 165 170 175

<210> 85

<211> 51

<212> PRT

<213> Homo sapien

<400> 85

Met Ser Pro Leu Arg Thr Pro Leu Leu Arg Gly Leu Gln Glu Leu Gly
 1 5 10 15

Glu Glu Trp Lys Ser Ala Lys Arg Ile Thr Ser Phe Ser Lys Ser Met
 20 25 30

Gly Thr Thr Arg Ala Arg Gly Cys Glu Pro Gly Gly Trp Leu Pro Phe
 35 40 45

Thr Gly Leu
 50

<210> 86

<211> 48

<212> PRT

<213> Homo sapien

<400> 86

Met Val Pro Ile Gly Cys Lys Leu Ser Glu Ser Phe His Phe Asp Asn
 1 5 10 15

Leu Ser Tyr His Asp Leu Ile Val Cys Leu Gln Ile Gln Asp Leu Lys
 20 25 30

Ser Phe Leu Ser Gln Ala Trp Lys Glu Leu Leu Tyr Tyr Gln Tyr Cys
 35 40 45

0909919-12401
 F022T 616660

<210> 87
 <211> 40
 <212> PRT
 <213> Homo sapien

<400> 87

Met Leu Phe Pro Val Ala Val Tyr Ser Tyr Asn Ile Asn Ile Ile Val
 1 5 10 15

Pro Trp Leu Thr Asp Lys Asn Glu Ser Ile Lys Cys Pro Val Ser Glu
 20 25 30

Thr Gln Val Phe Phe Leu His Pro
 35 40

<210> 88
 <211> 34
 <212> PRT
 <213> Homo sapien

<400> 88

Met Ser Trp Ser Leu Pro Ser Leu Lys Asn Leu Ser Cys His Ile Ile
 1 5 10 15

His Val Leu Asn Lys Phe Val Cys Ile Phe Leu Leu Ile Cys Leu Ile
 20 25 30

Ser Ile

<210> 89
 <211> 32
 <212> PRT
 <213> Homo sapien

<400> 89

Met Cys Val Cys Glu Lys Glu Phe Leu Asn Val Phe Tyr Leu Leu Arg
 1 5 10 15

Gly Pro Ser Pro Thr Leu Gly Leu Ser Val Ile Ser Asn His Ile Thr
 20 25 30

<210> 90
 <211> 28
 <212> PRT
 <213> Homo sapien

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<400> 90

Met Lys Pro Gln Cys Cys Lys Phe Thr Val Phe Ala Cys Ser Arg Cys
 1 5 10 15

Phe Val Leu Lys Glu Thr Phe Thr Ile Tyr Leu Leu
 20 25

<210> 91

<211> 111

<212> PRT

<213> Homo sapien

<400> 91

Lys Asp Arg Lys Ser Gly Arg Thr Ala Leu His Leu Ala Ala Glu Glu
 1 5 10 15

Ala Asn Leu Glu Leu Ile Arg Leu Phe Leu Glu Arg Pro Ser Cys Leu
 20 25 30

Ser Phe Val Asn Ala Lys Ala Tyr Asn Gly Asn Thr Ala Leu His Val
 35 40 45

Ala Ala Ser Leu Gln Tyr Arg Leu Thr Gln Leu Asp Ala Val Arg Leu
 50 55 60

Leu Met Arg Lys Gly Ala Asp Pro Ser Thr Arg Asn Leu Glu Asn Glu
 65 70 75 80

Gln Pro Val His Leu Val Pro Asp Gly Pro Val Gly Glu Gln Ile Arg
 85 90 95

Arg Ile Leu Lys Gly Lys Ser Ile Gln Gln Arg Ala Pro Pro Tyr
 100 105 110

<210> 92

<211> 33

<212> PRT

<213> Homo sapien

<400> 92

Met Gly Ile Ser Trp Ser Ala Phe Gly Pro Arg Ile Arg Ile Asp Gly
 1 5 10 15

Ser Pro Pro Pro Cys Leu Leu Pro Thr Pro Pro Leu Leu Pro Leu Cys
 20 25 30

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Leu

<210> 93
 <211> 109
 <212> PRT
 <213> Homo sapien

<400> 93

Arg Asp Glu Ser Pro Glu Pro Gln Arg Pro Ser Trp Ala Arg Ser Arg
 1 5 10 15

His Cys Glu Ala Cys Val Glu Glu Ser Ser Lys Leu Asp Phe Ser Glu
 20 25 30

Phe Gly Ala Lys Arg Lys Phe Thr Gln Ser Phe Met Arg Ser Glu Glu
 35 40 45

Glu Gly Glu Lys Glu Arg Thr Glu Asn Arg Glu Glu Gly Arg Phe Ala
 50 55 60

Ser Gly Arg Arg Ser Gln Tyr Arg Arg Ser Thr Asp Arg Glu Glu Glu
 65 70 75 80

Glu Glu Met Asp Asp Glu Ala Ile Ile Ala Ala Trp Arg Arg Arg Gln
 85 90 95

Glu Glu Thr Arg Thr Lys Leu Gln Lys Arg Arg Glu Asp
 100 105

<210> 94
 <211> 44
 <212> PRT
 <213> Homo sapien

<400> 94

Met Asn Val Asp Thr Phe Leu Glu Asn Ile Tyr Gln Cys Glu Asn Phe
 1 5 10 15

Phe Asn Thr Leu Thr Thr Lys Ile Lys Tyr Ser Leu Ile Ser Leu Phe
 20 25 30

Asn Lys His Gln Asn Asn Val Ser Val Phe Ile Leu
 35 40

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35

40

45

Val Cys His His Ala Trp Thr Val Leu Gly Phe Phe Val Phe Leu Val
50 55 60

Glu Ile Gly Phe Cys His Leu Asp Gln Ala Asn Leu Glu
65 70 75

<210> 98
<211> 36
<212> PRT
<213> Homo sapien

<400> 98

Met Ser Val Trp Ser Cys Tyr Gln Pro Val Leu Leu Asn Val Leu Gly
1 5 10 15

Gln Leu Glu Thr Ile Ile Lys Glu Thr Asp Pro Gly Asp His Gln Ser
20 25 30

Ser Phe Arg Leu
35

<210> 99
<211> 28
<212> PRT
<213> Homo sapien

<400> 99

Met Asp Phe Val Lys His Gln Leu Val Asn Ile Phe Lys Phe Ile Ser
1 5 10 15

Cys Met Ala Leu Val Ser Val Pro Cys Ser Lys Cys
20 25

<210> 100
<211> 57
<212> PRT
<213> Homo sapien

<400> 100

Met Trp Gly Phe Ile Ala Lys Asn Gly Lys Ile Phe Gly Leu Ile Phe
1 5 10 15

Cys Lys Phe Ser Leu Cys Leu Gly Asn Ser His Arg Met Trp Arg Asn
20 25 30

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Met Cys Tyr Leu Leu Leu Leu Leu Ile Gln Thr Ala Glu Leu Leu Ile

68

1 5 10 15

His Pro Gln Gly Leu Gln Ala Val Ser Asn Gly Glu Ser Ala Leu Lys
 20 25 30

Gly Thr Arg Pro Thr Phe Ser Ser Pro Phe Ile Leu
 35 40

<210> 104
 <211> 48
 <212> PRT
 <213> Homo sapien
 <400> 104

Met Arg Ser Ile Phe Leu Leu Leu Lys Phe Ile Leu Asn Ala Asn Val
 1 5 10 15

Phe Cys Arg Cys Phe Ile Trp Glu Ile Leu Leu Cys Leu Lys Thr Tyr
 20 25 30

Glu Ile Asn Leu Ser Cys Gly Leu Pro Thr Ser Lys Pro Leu Leu Thr
 35 40 45

<210> 105
 <211> 109
 <212> PRT
 <213> Homo sapien
 <400> 105

Phe Phe Phe Ser Leu Arg Gln Ser Leu Leu Leu Leu Pro Arg Leu Glu
 1 5 10 15

Phe Asn Gly Thr Ile Leu Ala Tyr His Asn Leu Cys Leu Leu Gly Ser
 20 25 30

Ser Asn Ser Pro Ala Ser Gly Ser Gln Val Ala Gly Ile Thr Gly Met
 35 40 45

Cys His His Thr Arg Leu Ile Phe Val Phe Leu Val Glu Thr Gly Tyr
 50 55 60

Leu His Val Gly Gln Ala Gly Leu Glu Leu Leu Thr Ser Gly Asp Pro
 65 70 75 80

Pro Thr Ser Ala Ser Gln Ser Ala Gly Ile Thr Gly Val Ser Arg His
 85 90 95

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Ala Trp Pro Ser Ser Ala Phe Ile His Ile Phe Ser Pro
100 105

<210> 106
<211> 46
<212> PRT
<213> Homo sapien

<400> 106

Met Val Val Asp Gln Ala Asn Pro Leu Glu Val Ile Ser Ser Phe Asn
1 5 10 15

Lys Phe Cys Thr Leu Pro Trp Ala Gly Arg Ser Glu Ala Glu Phe His
20 25 30

His Thr Ala Ala Ile Val Trp Ser Asp Ser Val Gln Leu Gly
35 40 45

<210> 107
<211> 24
<212> PRT
<213> Homo sapien

<400> 107

Met Arg Trp Ser Gly Gly Pro Glu Asn Thr Gly Asn Ile Lys Ser Leu
1 5 10 15

Ser Gln Gly Asn Leu Met Phe Ser
20

<210> 108
<211> 697
<212> PRT
<213> Homo sapien

<400> 108

Met Cys Lys Ser Leu Arg Tyr Cys Phe Ser His Cys Leu Tyr Leu Ala
1 5 10 15

Met Thr Arg Leu Glu Glu Val Asn Arg Glu Val Asn Met His Ser Ser
20 25 30

Val Arg Tyr Leu Gly Tyr Leu Ala Arg Ile Asn Leu Leu Val Ala Ile
35 40 45

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Cys Leu Gly Leu Tyr Val Arg Trp Glu Lys Thr Ala Asn Ser Leu Ile
50 55 60

Leu Val Ile Phe Ile Leu Gly Leu Phe Val Leu Gly Ile Ala Ser Ile
65 70 75 80

Leu Tyr Tyr Tyr Phe Ser Met Glu Ala Ala Ser Leu Ser Leu Ser Asn
85 90 95

Leu Trp Phe Gly Phe Leu Leu Gly Leu Leu Cys Phe Leu Asp Asn Ser
100 105 110

Ser Phe Lys Asn Asp Val Lys Glu Glu Ser Thr Lys Tyr Leu Leu Leu
115 120 125

Thr Ser Ile Val Leu Arg Ile Leu Cys Ser Leu Val Glu Arg Ile Ser
130 135 140

Gly Tyr Val Arg His Arg Pro Thr Leu Leu Thr Thr Val Glu Phe Leu
145 150 155 160

Glu Leu Val Gly Phe Ala Ile Ala Ser Thr Thr Met Leu Val Glu Lys
165 170 175

Ser Leu Ser Val Ile Leu Leu Val Val Ala Leu Ala Met Leu Ile Ile
180 185 190

Asp Leu Arg Met Lys Ser Phe Leu Ala Ile Pro Asn Leu Val Ile Phe
195 200 205

Ala Val Leu Leu Phe Phe Ser Ser Leu Glu Thr Pro Lys Asn Pro Ile
210 215 220

Ala Phe Ala Cys Phe Phe Ile Cys Leu Ile Thr Asp Pro Phe Leu Asp
225 230 235 240

Ile Tyr Phe Ser Gly Leu Ser Val Thr Glu Arg Trp Lys Pro Phe Leu
245 250 255

Tyr Arg Gly Arg Ile Cys Arg Arg Leu Ser Val Val Phe Ala Gly Met
260 265 270

Ile Glu Leu Thr Phe Phe Ile Leu Ser Ala Phe Lys Leu Arg Asp Thr
275 280 285

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Gly Lys
130

<210> 112
<211> 31
<212> PRT
<213> Homo sapien

<400> 112

Met	Leu	Val	Met	Val	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Leu	Val	Ile	Leu
1				5					10						15	

Met	Leu	Trp	Lys	Arg	Ser	His	Gly	Phe	Ile	Ser	Lys	Gly	Gly	Asn
			20					25					30	

<210> 113
<211> 107
<212> PRT
<213> Homo sapien

<400> 113

Pro	Leu	Pro	Pro	Leu	Leu	Ser	Ile	Phe	Ile	Leu	Thr	Gly	His	Lys	Gln
1				5					10					15	

Gly	Ala	Arg	Gly	Leu	His	Phe	Gly	Arg	Pro	Arg	Trp	Ala	Asp	His	Leu
			20					25					30		

Arg	Pro	Gly	Val	Ala	His	Gln	Pro	Gly	Gln	Cys	Gly	Glu	Thr	Val	Ser
		35					40					45			

Thr	Lys	Asn	Thr	Lys	Ile	Ser	Trp	Ala	Trp	Trp	Cys	Thr	Pro	Ala	Ile
	50					55					60				

Pro	Ala	Thr	Arg	Arg	Val	Lys	Gln	Glu	Asn	Arg	Leu	Asn	Pro	Gly	Gly
65					70					75					80

Arg	Gly	Phe	Ser	Glu	Pro	Arg	Ser	His	His	Arg	Thr	Pro	Thr	Trp	Gly
				85					90					95	

Thr	Glu	Arg	Asp	Ser	Val	Pro	Lys	Arg	Ala	Lys
			100					105		

<210> 114
<211> 58
<212> PRT
<213> Homo sapien

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<400> 114

Met Leu Leu Met Asp Thr Arg Lys Glu Leu Leu His Ala Leu Glu Met
 1 5 10 15

Glu Pro Leu Leu Ser Leu Gln Ala Phe Val Val Leu Pro Phe Lys Ser
 20 25 30

Ala Ile His Gly Pro Gln Gln Glu Asn Asn Leu Val Phe Ser Leu Leu
 35 40 45

Ile Val Leu Asp Lys Tyr Val His Met Asp
 50 55

<210> 115

<211> 46

<212> PRT

<213> Homo sapien

<400> 115

Met Ser Asp Ser His Gln Gly Ser Gly Thr Val Pro Phe Leu Gly Ser
 1 5 10 15

Pro Thr Lys Ser Asn Ser Leu Asp Pro Glu Lys Trp Ser Ala Trp Asp
 20 25 30

Ala Leu Lys Arg Trp Gly Cys Pro Cys Val Ala Ala Ser Asn
 35 40 45

<210> 116

<211> 45

<212> PRT

<213> Homo sapien

<400> 116

Met His Pro Asp Leu Asn Glu Gln Ala Glu Arg Lys Val Thr Lys Lys
 1 5 10 15

Asp Ser Thr Pro Gly Glu Ser Glu Pro Cys Gly Pro Lys Val Phe Ile
 20 25 30

Arg Lys Thr Val Leu Gly His Leu Asp Thr Tyr Pro Arg
 35 40 45

<210> 117

<211> 45

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<400> 120

Met Pro Tyr Cys Ile Leu His Thr Ala Leu Phe Ser Arg Gly Ser Gly
1 5 10 15

Ser Lys Leu His Ser Ser His Tyr Leu Cys Ser Leu Lys Ile Lys Val
20 25 30

Phe Gln Gln His Ser Leu Leu Ser Ser
35 40

<210> 121

<211> 105

<212> PRT

<213> Homo sapien

<400> 121

Met Gln Gly Lys Cys Thr Pro Thr Ile Phe Phe Phe Ile Ala Ser Phe
1 5 10 15

Ile Phe Asp Thr Glu Ser Ser Ser Val Ala Gln Ala Gly Val Gln Trp
20 25 30

Arg Asp Leu Gly Ser Leu Gln Pro Leu Pro Pro Gly Phe Thr Pro Phe
35 40 45

Ser Cys Leu Ser Leu Pro Ser Ser Trp Asp Tyr Arg Arg Pro Pro Pro
50 55 60

Arg Pro Ala Asn Phe Phe Cys Ile Phe Ser Arg Asp Gly Val Ser Pro
65 70 75 80

Cys Ala Pro Gly Trp Ser Arg Ser Pro Asn Leu Met Ile Arg Pro Pro
85 90 95

Arg Pro Pro Lys Val Leu Gly Leu Gln
100 105

<210> 122

<211> 38

<212> PRT

<213> Homo sapien

<400> 122

Met Gly Gln Arg Glu Leu Phe Phe Tyr Ile Ala His Cys Ser Leu Thr
1 5 10 15

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Ala Ile Arg Lys Ile Ser Cys Ser Trp Phe Ile Leu Asn Leu Gln Thr
20 25 30

Thr Asp Met Ile Phe Gln
35

<210> 123
<211> 15
<212> PRT
<213> Homo sapien

<400> 123

Met Gln Glu Tyr Lys His Cys His Met Asn Asn Leu Ser Leu Tyr
1 5 10 15

<210> 124
<211> 764
<212> PRT
<213> Homo sapien

<400> 124

Met Leu Leu Phe Val Leu Thr Cys Leu Leu Ala Val Phe Pro Ala Ile
1 5 10 15

Ser Thr Lys Ser Pro Ile Phe Gly Pro Glu Glu Val Asn Ser Val Glu
20 25 30

Gly Asn Ser Val Ser Ile Thr Cys Tyr Tyr Pro Pro Thr Ser Val Asn
35 40 45

Arg His Thr Arg Lys Tyr Trp Cys Arg Gln Gly Ala Arg Gly Gly Cys
50 55 60

Ile Thr Leu Ile Ser Ser Glu Gly Tyr Val Ser Ser Lys Tyr Ala Gly
65 70 75 80

Arg Ala Asn Leu Thr Asn Phe Pro Glu Asn Gly Thr Phe Val Val Asn
85 90 95

Ile Ala Gln Leu Ser Gln Asp Asp Ser Gly Arg Tyr Lys Cys Gly Leu
100 105 110

Gly Ile Asn Ser Arg Gly Leu Ser Phe Asp Val Ser Leu Glu Val Ser
115 120 125

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Gln Gly Pro Gly Leu Leu Asn Asp Thr Lys Val Tyr Thr Val Asp Leu
130 135 140

Gly Arg Thr Val Thr Ile Asn Cys Pro Phe Lys Thr Glu Asn Ala Gln
145 150 155 160

Lys Arg Lys Ser Leu Tyr Lys Gln Ile Gly Leu Tyr Pro Val Leu Val
165 170 175

Ile Asp Ser Ser Gly Tyr Val Asn Pro Asn Tyr Thr Gly Arg Ile Arg
180 185 190

Leu Asp Ile Gln Gly Thr Gly Gln Leu Leu Phe Ser Val Val Ile Asn
195 200 205

Gln Leu Arg Leu Ser Asp Ala Gly Gln Tyr Leu Cys Gln Ala Gly Asp
210 215 220

Asp Ser Asn Ser Asn Lys Lys Asn Ala Asp Leu Gln Val Leu Lys Pro
225 230 235 240

Glu Pro Glu Leu Val Tyr Glu Asp Leu Arg Gly Ser Val Thr Phe His
245 250 255

Cys Ala Leu Gly Pro Glu Val Ala Asn Val Ala Lys Phe Leu Cys Arg
260 265 270

Gln Ser Ser Gly Glu Asn Cys Asp Val Val Val Asn Thr Leu Gly Lys
275 280 285

Arg Ala Pro Ala Phe Glu Gly Arg Ile Leu Leu Asn Pro Gln Asp Lys
290 295 300

Asp Gly Ser Phe Ser Val Val Ile Thr Gly Leu Arg Lys Glu Asp Ala
305 310 315 320

Gly Arg Tyr Leu Cys Gly Ala His Ser Asp Gly Gln Leu Gln Glu Gly
325 330 335

Ser Pro Ile Gln Ala Trp Gln Leu Phe Val Asn Glu Glu Ser Thr Ile
340 345 350

Pro Arg Ser Pro Thr Val Val Lys Gly Val Ala Gly Ser Ser Val Ala
355 360 365

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Val Leu Cys Pro Tyr Asn Arg Lys Glu Ser Lys Ser Ile Lys Tyr Trp
370 375 380

Cys Leu Trp Glu Gly Ala Gln Asn Gly Arg Cys Pro Leu Leu Val Asp
385 390 395 400

Ser Glu Gly Trp Val Lys Ala Gln Tyr Glu Gly Arg Leu Ser Leu Leu
405 410 415

Glu Glu Pro Gly Asn Gly Thr Phe Thr Val Ile Leu Asn Gln Leu Thr
420 425 430

Ser Arg Asp Ala Gly Phe Tyr Trp Cys Leu Thr Asn Gly Asp Thr Leu
435 440 445

Trp Arg Thr Thr Val Glu Ile Lys Ile Ile Glu Gly Glu Pro Asn Leu
450 455 460

Lys Val Pro Gly Asn Val Thr Ala Val Leu Gly Glu Thr Leu Lys Val
465 470 475 480

Pro Cys His Phe Pro Cys Lys Phe Ser Ser Tyr Glu Lys Tyr Trp Cys
485 490 495

Lys Trp Asn Asn Thr Gly Cys Gln Ala Leu Pro Ser Gln Asp Glu Gly
500 505 510

Pro Ser Lys Ala Phe Val Asn Cys Asp Glu Asn Ser Arg Leu Val Ser
515 520 525

Leu Thr Leu Asn Leu Val Thr Arg Ala Asp Glu Gly Trp Tyr Trp Cys
530 535 540

Gly Val Lys Gln Gly His Phe Tyr Gly Glu Thr Ala Ala Val Tyr Val
545 550 555 560

Ala Val Glu Glu Arg Lys Ala Ala Gly Ser Arg Asp Val Ser Leu Ala
565 570 575

Lys Ala Asp Ala Ala Pro Asp Glu Lys Val Leu Asp Ser Gly Phe Arg
580 585 590

Glu Ile Glu Asn Lys Ala Ile Gln Asp Pro Arg Leu Phe Ala Glu Glu

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595

600

605

Lys Ala Val Ala Asp Thr Arg Asp Gln Ala Asp Gly Ser Arg Ala Ser
610 615 620

Val Asp Ser Gly Ser Ser Glu Glu Gln Gly Gly Ser Ser Arg Ala Leu
625 630 635 640

Val Ser Thr Leu Val Pro Leu Gly Leu Val Leu Ala Val Gly Ala Val
645 650 655

Ala Val Gly Val Ala Arg Ala Arg His Arg Lys Asn Val Asp Arg Val
660 665 670

Ser Ile Arg Ser Tyr Arg Thr Asp Ile Ser Met Ser Asp Phe Glu Asn
675 680 685

Ser Arg Glu Phe Gly Ala Asn Asp Asn Met Gly Ala Ser Ser Ile Thr
690 695 700

Gln Glu Thr Ser Leu Gly Gly Lys Glu Glu Phe Val Ala Thr Thr Glu
705 710 715 720

Ser Thr Thr Glu Thr Lys Glu Pro Lys Lys Ala Lys Arg Ser Ser Lys
725 730 735

Glu Glu Ala Glu Met Ala Tyr Lys Asp Phe Leu Leu Gln Ser Ser Thr
740 745 750

Val Ala Ala Glu Ala Gln Asp Gly Pro Gln Glu Ala
755 760

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